

## REMARKS

The present application includes pending claims 1-25. Claims 1-13, and 21-25 remain rejected, while claims 14-20 have been allowed. The Applicants respectfully submit that claims 1-25 define patentable subject matter.

Claims 1-5, 9, and 13 remain rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,759,070 ("Voroba"). Claims 6-8 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Voroba in view of United States Patent No. 6,381,333 ("Suzuki"). Claims 10-12 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Voroba in view of United States Patent No. 5,260,920 ("Ide"). Claims 21, 22, 24, and 25 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Ide in view of Voroba. Claim 23 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Voroba in view of Kasai. The Applicants respectfully traverse these rejections at least for the reasons set forth previously during prosecution and the following:

### **I. Voroba Does Not Anticipate Claims 1-5, 9, And 13**

The Applicants first turn to the rejection of claims 1-5, 9, and 13 as being anticipated by Voroba. "A claim is anticipated only if **each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *See* Manual of Patent Examining Procedure (MPEP) at 2131 (internal citation omitted). Further, "[t]he identical invention must be shown in as complete detail as it is contained... in the claim." *See id.* (internal citation omitted).

Voroba discloses a "programmable patient controlled master hearing aid... which consists of a hearing aid test module, an operator's console and a patient's console, both

of which are microprocessor based, and all of which are interconnected to provide a testing apparatus which is used by the patient to select electronic components to be employed (sic) in a hearing aid.” Voroba at Abstract.

Voroba discloses an “audio board” that switches and mixes sound. *See id.* at column 7, lines 4-9 (“Both tape decks 65, 66 are connected to an audio board 69 which switches and mixes the sound which is connected to power amplifiers 71 for each of the four speakers 22....”). Voroba, however, does not expressly or inherently describe an audio signal processing system that includes an audiometer, as recited in claim 1.

**A. Voroba Does Not Explicitly Disclose A Clinical Audiometer**

The Office Action concedes that Voroba does not explicitly disclose an audiometer. *See* December 7, 2005 Office Action at page 3, and June 10, 2005 Office Action at page 2 (“... Voroba does not explicitly disclose an audiometer...”). The Office Action, however, attempts to overcome this deficiency by stating that “Voroba discloses testing a patients perception of hearing, i.e., audiometer, Col. 3, lines 22-66”). *See id.* Thus, the Office Action implies that Voroba only **inherently** discloses a clinical audiometer.

In response to the previous Amendment, the Office Action once again relies on Voroba at column 3, lines 22-66). *See* December 7, 2005 Office Action at page 2. The passage cited by the Office Action, however, **does not explicitly or inherently** describe a clinical audiometer. Instead, Voroba only discloses mixing sound, which may be performed with a standard mixer.

Tape decks are provided for the presentation of a “target stimulus” (e.g., background noise or competing speech signals). Outputs from the tape decks **are electronically**

**mixed** and preferably provided in a multiphonic sound field around the patient, that is, with sound emanating toward the patient from many directions.

Voroba at column 3, lines 18-25 (emphasis added). The passage cited in the Office Action does not explicitly or inherently describe a clinical audiometer. Instead, as shown above, Voroba only discloses mixing sound, which may be performed with a standard mixer.

**B. Voroba Does Not Inherently Disclose A Clinical Audiometer**

The Applicants submit that a rejection based on inherency must include a statement of the rationale or evidence tending to show inherency. *See* Manual of Patent Examining Procedure at § 2112. “The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.” *See id. citing In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

Voroba only discloses “electronically mixing” sound, which can be accomplished through a standard mixer. Voroba, however, does not explicitly or inherently disclose a clinical audiometer.

To establish inherency, the extrinsic evidence “**must make clear that the missing descriptive matter is necessarily present in the thing described in the reference**, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

*In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (emphasis added). The Applicants respectfully submit that neither Voroba, nor the

Office Action, “make[s] clear that the missing descriptive matter,” said to be inherent of Voroba, “is necessarily present in” Voroba.

A rejection based on inherency **must** be based on factual or technical reasoning:

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teaching of the applied prior art.

*Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

The Office Action, however, merely cites a portion of Voroba that clearly does not explicitly disclose a clinical audiometer, as the Office Action concedes. Further, the Office Action does not explain how the mixer described in this passage is **necessarily** (not merely possible or probable) a “clinical audiometer.” The Applicants respectfully submit that the Office Action does not contain a basis in fact and/or technical reasoning to support this rejection based on inherency. Instead, as discussed above, these claims of the present application stand rejected based on a conclusory statement of inherency, rather than upon a “basis in fact and/or technical reasoning.” Accordingly, the Applicants respectfully submit that, absent a “basis in fact and/or technical reasoning” for the rejection of record, that rejection should be reconsidered and withdrawn. At least for this reason, the Office Action has not established a *prima facie* case of anticipation with respect to claims 1-5, 9, and 13.

**C. Claims 1-5, 9, And 13 Should Be In Condition For Allowance**

The Applicants respectfully submit that Voroba does not explicitly or inherently disclose an audio signal processing system that comprises a clinical audiometer, such as

recited in claims 1-5, 9, and 13. Thus, at least for this reason, these claims should be in condition for allowance.

**D. Voroba Also Does Not Expressly Or Inherently Disclose Loudspeakers That Are Placed And Oriented Arbitrarily About A Listening Position**

The Office Action states the following:

Applicants argue page 12 that Voroba does not disclose loudspeakers placed arbitrary about a listening position. This is not persuasive as arbitray is defined in Webster's Collegiate Dictionary, 10<sup>th</sup> Edition as "depending on individual discretion and not fixed by law".

See December 7, 2005 Office Action at page 2. The Office Action, however, seems to ignore this definition when considering Voroba. The Office Action refers to Figure 1 of Voroba as showing arbitrarily-positioned speakers 22. *See id.*

Webster's Collegiate Dictionary, 10<sup>th</sup> Edition (2001) defines arbitrary, inter alia, as follows:

Depending on **individual discretion** (as of a judge) and **not** fixed by law... Based on or determined by **individual preference or convenience rather than by necessity or the intrinsic nature of something....** existing or coming about seemingly at **random or by chance....**

The Applicants previously enclosed a copy of page 59 of Webster's Collegiate Dictionary, 10<sup>th</sup> Edition (2005), which lists "arbitrary." The term "arbitrarily" has a clear meaning as shown above, and is not overly broad as suggested in the Office Action.

Voroba clearly does not explicitly or inherently describe loudspeakers that are placed and oriented **arbitrarily** (i.e., depending on individual discretion, preference, convenience, or by chance) about the listening position, as recited in claims 2 and 3. In fact, Voroba actually teaches away from arbitrary placement. For example, Voroba

discloses the following:

**FIG. 1** shows a preferred test arrangement to enable the patient to comparatively select the proper electronic components 60 to be utilized in the patient's hearing aid so that the aid has those amplification characteristics which the patient prefers.

The patient is preferably situated in a sound field listening environment such as that shown in FIG. 1 with a plurality of **speakers 22 arrayed around the patient's head** so that the natural hearing environment in which the aid is to (sic) used can be recreated. **The speaker array is situated so that the physical design and natural acoustic characteristics of the head and human hearing mechanism are fully utilized during the evaluation.**

*Id.* at column 5, lines 49-61 (emphasis added). This passage describes the arrangement shown in Figure 1. Voroba is clear -- the orientation and placement of the speakers 22 shown in Figure 1 is determined by full utilization of the physical design and natural acoustic characteristics of the head and human hearing mechanism. Voroba does **not** teach or suggest that the **speakers 22** are situated based on (1) individual discretion, (2) preference or convenience, or (3) at random or by chance. Instead, Voroba clearly and unambiguously states that the "speaker array is situated **so that the physical design and natural acoustic characteristics of the head and human hearing mechanism are fully utilized during the evaluation.**" *See id.* (emphasis added). Such an arrangement is not arbitrary, i.e., based on individual discretion, preference and/or at random. Rather, the speaker arrangement is dictated by the "physical design and natural acoustic characteristics of the head and human hearing mechanism," which is, **by definition, not arbitrary**. Thus, at least for this reason, the Applicants respectfully submit that (1) Voroba does not anticipate claims 2 and 3, and (2) the Office Action has not established a *prima facie* case of anticipation with respect to claim 2.

Additionally, with respect to claim 3, Voroba does not expressly or inherently describe loudspeakers that face different directions relative to each other and relative to the listening position. As clearly shown in Figure 1 of Voroba, the speakers 22 all face the listening area. Thus, at least for this reason, the Applicants respectfully submit that (1) Voroba does not anticipate claim 3, and (2) the Office Action has not established a *prima facie* case of anticipation with respect to claim 3.

**II. The Combination Of Voroba And Suzuki Does Not Render Claims 6-8 Unpatentable**

The Applicants next turn to the rejection of claims 6-8 as being unpatentable over Voroba in view of Suzuki. The Applicants respectfully submit that the combination of Voroba and Suxuki does not render claims 6-8 unpatentable at least for the reasons discussed above.

**III. The Combination Of Voroba And Ide Does Not Render Claims 10-12 Unpatentable**

The Applicants now turn to the rejection of claims 10-12 as being unpatentable over Voroba in view of Ide. The Applicants respectfully submit that the combination of Voroba and Ide does not render claims 10-12 unpatentable at least for the reasons discussed above.

**IV. The Combination Of Ide And Voroba Is Improper**

The Applicants now turn to the rejection of claims 21, 22, 24, and 25 as being unpatentable over Ide in view of Voroba. The Office Action states the following:

Applicants argue... that the combination of Ide and Voroba is improper. This is not persuasive as both reference create a natural hearing environment....

See December 7, 2005 Office Action at page 2. Thus, the Office Action contends that the

combination of these two references is proper merely because both generally relate to hearing environments. As detailed below, however, this combination is improper because Voroba relates to a hearing environment **within an ear**, while Ide relates to a macroscopic hearing environment.

One having ordinary skill in the art would not be motivated to combine Voroba with Ide to produce the inventions recited in the claims of the present application. Voroba discloses a “programmable patient controlled master hearing aid” (See Voroba at Abstract), while Ide discloses a “system for reproducing a sound field simulating a real acoustic space” (See Ide at Abstract).

As discussed in the background of the present application:

However, such entertainment systems are not suited for use in hearing and hearing aid assessment for many reasons. **For example, in entertainment audio systems, the loudspeakers are located substantially distant from the listener, at or near the perimeter of a listening area that is accessible to multiple listeners.**

In stark contrast, **the sound reproduction system of Ide is located in a large room.**

FIG. 2 shows an example of construction of the sound reproduction system according to the invention. As the sound reproduction system, a three-dimensional space 40 which is substantially similar to the assumed three-dimensional space 10 of the sound collection system is assumed to exist. As the three dimensional space 40 of the sound reproduction system, **a room, e.g., a listening room, can be used. In the case of using a larger space, like halls or an outdoor space, the entire space can be used by zoning a determined space or ignoring the capacity of space.**

Ide at column 5, lines 10-20 (emphasis added). In short, Ide discloses a system in which speakers are placed at relatively large distances from one another in a room. As



discussed in the present application, **such entertainment systems are not suited for use in hearing aid assessment for many reasons.**

The speakers disclosed in Ide are located substantially distant from the listener, at or near the perimeter of a listening area that is accessible to multiple listeners. One having ordinary skill in the art would not be motivated to combine the macroscopic acoustic environment of Ide with Voroba, which specifically relates to hearing aids, or any other reference to produce systems or methods recited in the claims of the present application. Additionally, the Office Action's statement regarding motivation to combine these references (*See, e.g.*, December 7, 2005 Office Action at page 8: "it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of recording sounds as disclosed by Ide and the method of testing of hearing aids in order to create a vivid and natural three-dimensional sound field in which the hearing aid to be used can be recreated") amount to no more than a conclusory statement of convenient assumptions about one of ordinary skill in the art, which is a factual question that cannot be resolved on "subjective belief and unknown authority." *See In re Lee*, 277 F.3d 1338, 1344 (Fed. Cir. 2002). Thus, at least for these reasons, the Applicants respectfully submit that (1) claims 21, 22, 24, and 25 should be in condition for allowance, and (2) the Office Action has not established a *prima facie* case of obviousness with respect to these claims.

#### **V. The Combination Of Voroba And Kasai Is Improper**

The Applicants finally turn to the rejection of claim 23 as being unpatentable over Voroba in view of Kasai. The Applicants respectfully submit that one having ordinary skill in the art would not be motivated to combine Kasai with Voroba. As discussed

previously, Kasai relates to “an apparatus and method for localizing a sound image, more specifically the simplification of its structure and processes.” Kasai at column 1, lines 15-17. In particular, Kasai relates to “surround sound” systems used for entertainment purposes. As discussed in the present application, **such entertainment systems are not suited for use in hearing aid assessment for many reasons.** The Office Action states that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow at least two speakers to produce a sound image that appears to emanate from a different location (including another speaker) to produce a surround sound image and a natural hearing environment.” See December 7, 2005 Office Action at pages 10-11. Similar to the “motivation to combine” reasoning for Voroba and Ide, this statement amounts to no more than a conclusory statement of convenient assumptions about one of ordinary skill in the art, which is a factual question that cannot be resolved on “subjective belief and unknown authority.” See *In re Lee*, 277 F.3d at 1344. One having ordinary skill in the art would not be motivated to combine the macroscopic surround sound system of Kasai with the any other reference to produce a system or method as recited in the claims of the present application, which are directed to testing hearing and hearing aids. Thus, at least for this reason, the Applicants respectfully submit that claim 23 should be in condition for allowance.

## VII. Conclusion

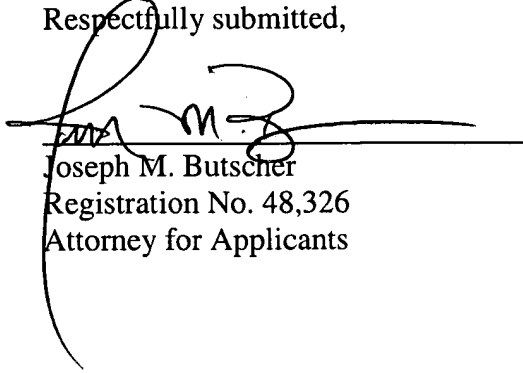
The Applicants respectfully submit that claims 1-25 of the present application should be in condition for allowance at least for the reasons discussed above and request reconsideration of the claim rejections. If the Examiner has any questions or the Applicants can be of any assistance, the Examiner is invited to contact the Applicants.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Account No. 13-0017.

Respectfully submitted,

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